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What is claimed is:

1   1. A system for collecting, storing, and reviewing data related to events occurring under
2   the direction of an automated controller, comprising:

3   a) a digital signal capture card for sensing and collecting discrete digital
4   signals;

5   b) a multi-port serial port expansion card for sensing and collecting serial
6   digital communication messages;

7   c) a video frame grabber and compression card for sensing and collecting
8   video signals;

9   d) means for indexing and storing said digital and video signals;

10   e) means for relating occurrence of a particular item of a particular data
11   type, whether digital, serial or video, to the most closely time-
12   related data item from the other said data types; and

13   f) a display for control of said system and presentation of recorded data to a
14   user during review.

1   2. The system of claim 1, wherein reviewed discrete digital data are presented in graphical
2   strip chart format.

1   3. The system of claim 1, wherein reviewed video data are presented in picture format of
2   still image or time-motion video images.

1   4. The system of claim 1, wherein reviewed serial communication data are presented in
2   time-ordered message sequence.

1   5. The system of claim 1, wherein reviewed serial communication data are presented as
2   recorded in hexadecimal or ASCII format.

1   6. The system of claim 1, wherein reviewed serial communication data are translated
2   according to message parsing rules.

1   7. A system for collecting, storing, and reviewing data related to events occurring under
2   the direction of an automated controller, comprising a display for displaying said
3   data, operatively connected to:

4   a) means for sensing and collecting discrete digital signals;

5   b) means for indexing and storing said digital signals;

6   c) means for sensing and collecting serial digital communication messages;

7   d) means for indexing and storing said serial messages;

8   e) means for sensing and collecting video signals;

9   f) means for indexing and storing said video signals; and

10   h) means for relating occurrence of a particular item of a particular data
11   type, whether digital, serial or video, to the most closely time-
12   related data item from the other said data types, retrieving and
13   displaying said time-related data items, according to data the type
14   and data item directed by a user,

15   wherein said display displays each data type, whether digital, serial or
16   video, in a time-synchronized manner, and

17   wherein said user directs a displayed time of any individual data type,
18   whether digital, serial or video, and the remaining two data
19   types are automatically moved to a newly directed time.

1   8. The system of claim 7, wherein reviewed discrete digital data are presented in graphical
2   strip chart format.

1   9. The system of claim 7, wherein reviewed video data are presented in picture format of
2   still image or time-motion video images.

1   10. The system of claim 7, wherein reviewed serial communication data are presented in
2   time-ordered message sequence.

1   11. The system of claim 7, wherein reviewed serial communication data are presented as
2   recorded in hexadecimal or ASCII format.

1   12. The system of claim 7, wherein reviewed serial communication data are translated
2   according to message parsing rules.

1   13. The system of claim 1, wherein one or more of said serial digital communication
2   messages are transmitted via serial communication port and wherein said digital
3   signals are asserted via a digital input/output card.

1   14. The system of claim 13, wherein recorded video is output for viewing.